# Scribe for delicate wafers

The Scribe 100-3 from Production Equipment Sales Ltd (Uckfield, UK) has been developed for the new generation of delicate die wafers. High accuracy (1 micron resolution) and programmable scribing parameters make it ideal for optical applications such as laser diodes, using GaAs or silicon substrates.

*The Scribe 100-3 is ideal for delicate die wafers.*

Wafer sizes of up to 3-in and thickness of 100 microns upwards can be accommodated to produce die of 200 microns plus. The scribing force is set at a stable low level with programmable speed control and programmable break speed. Indeed the scribe and break parameters are entirely accessible in order to define, step by step, the full scribing sequence. They may then be saved for each customised product.

For contamination control purposes the 100-3 uses a bottom knife and replaceable top nylon film which also allows clean breaking and optimised operational quality.

PESL has also launched the DB-100 high accuracy eutectic die bonder with flip chip function and 1 micron pick/place resolution. It has been specifically developed for optical electronics applications and has fine temperature control whereby the bond platform is held at idle temperature of 50/60°C. This is then digitally ramped up as high as 320°C if required and rapidly cooled with a nitrogen blast back to idle temperature. This virtually eliminates substrate oxidation.

# Nanophase high purity ZnO nanoparticles

Nanophase Technologies Corp., (Romeoville, IL,USA) has made available a new line of high purity zinc oxide nanoparticles primarily targeted for electronic, personal care and other applications requiring UV protection combined with a very high degree of transparency.

The new product line provides essentially spherical zinc oxide nanoparticles that are approximately 20 nm and feature narrow particle size distributions, while retaining their discrete non-aggregating properties.

With this new line, Nanophase now offers zinc oxide nanoparticles in three distinct ranges: 60 nm, 35 nm, and 20 nm. All product lines offer high particle and surface chemical purity and are manufactured to ISO-9001, USP, and cGMP standards.

"We believe that there are a variety of applications for these smaller nanocrystalline materials," said Dr. Don Freed, Nanophase's VP of business development. "It has been demonstrated that different size nanoparticles of the same material may have distinctly different physical properties and behave differently in applications. We intend to expand our product offerings and plan to offer small versions of additional oxide products in the near future."

The new zinc oxide products are available both as dry powders and as stable dispersions in a variety of solvents, both aqueous and organic. The new products can also be surface treated using Nanophase's patented Discrete Particle

Encapsulation (DPE) process and engineered to meet specific customer applications such as transparent coatings designed to protect against ultraviolet and infrared radiation (similar in concept to the Company's already successful sunscreen products, but designed for industrial uses).

The extremely low levels of heavy metal impurities make this zinc oxide suitable for high reliability electronics applications including capacitors, varistors, photoprinting and electrophotography. The inherent flexibility of the PVS process allows the company to manufacture various intermediate particle sizes to meet customer-specific applications.